

Remarks

The Office Action dated January 24, 2007 has been carefully reviewed and the foregoing amendment has been made in consequence thereof.

Claims 1, 3-11, 13-20, and 22-27 are pending in this application. Claims 1-27 stand rejected. Claims 2, 12, and 21 have been canceled.

In accordance with 37 C.F.R. 1.136(a), a one month extension of time is submitted herewith to extend the due date of the response to the Office Action dated January 24, 2007, for the above-identified patent application from April 24, 2007, through and including May 24, 2007. In accordance with 37 C.F.R. 1.17(a), authorization to charge a deposit account in the amount of \$120.00 to cover this extension of time request also is submitted herewith.

The rejection of Claims 1-27 under 35 U.S.C. § 103(a) as being unpatentable over Holtrop (4,476,183) in view of Juriga (5,536,556), Weber (4,940,629), and Orimo (5,817,408) is respectfully traversed.

Applicants respectfully submit that the Section 103 rejection of the presently pending claims is not a proper rejection. As is well established, to establish a *prima facie* case of obviousness, three requirements must be satisfied. First, the prior art relied upon, coupled with the knowledge generally available in the art at the time of the invention, must contain some suggestion or incentive that would have motivated the skilled artisan to modify a reference or combine references. See *In re Fine*, 837 F.2d 1071, 1074, 5 U.S.P.Q.2d 1596, 1958 (Fed. Cir. 1988); *In re Skinner*, 2U.S.P.Q.2d 1788, 1790 (Bd. Pat. App. & Int. 1986). Second, the proposed modification of the prior art must have a reasonable expectation of success, determined from the vantage point of the skilled artisan at the time the invention was made. See *Amgen, Inc. v. Chugai Pharm. Co.*, 927 F.2d 1200, 1209, 18 U.S.P.Q.2d 1016, 1023 (Fed. Cir. 1991); *In re*

Erllich, 3 U.S.P.Q.2d 1011, 1016 (Bd. Pat. App. & Int. 1986). Lastly, the prior art reference or combination of references must teach or suggest all the limitations of the claims. See *In re Zurko*, 111 F.3d 887, 888-89, 42 U.S.P.Q.2d 1476, 1478 (Fed. Cir. 1997). Also, the teachings or suggestions, as well as the expectations of success, must come from the prior art, not applicant's disclosure. See *In re Vaeck*, 947 F.2d 488, 493, 20 U.S.P.Q.2d 1438, 1442 (Fed. Cir. 1991).

Moreover, the Federal Circuit has determined that:

[I]t is impermissible to use the claimed invention as an instruction manual or "template" to piece together the teachings of the prior art so that the claimed invention is rendered obvious. This court has previously stated that "[o]ne cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention."

In re Fitch, 23 USPQ2d 1780, 1784 (Fed. Cir. 1992), citing, *In re Gordan*, 221 USPQ at 1127.

Further, under Section 103, "it is impermissible . . . to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art." *In re Wesslau*, 147 USPQ 391, 393 (CCPA 1965). See also, *Smithkline Diagnostics, Inc. v. Helena Laboratories, Corp.*, 8 USPQ2d 1468, 1475 (Fed. Cir. 1988) ("claims, entire prior art, and prior art patents must be read 'as a whole'"). Also, if art "teaches away" from a claimed invention, such a teaching supports the nonobviousness of the invention. *U.S. v. Adams*, 148 USPQ 479 (1966); *Gillette Co. v. S.C. Johnson & Son, Inc.*, 16 USPQ2d 1923, 1927 (Fed. Cir. 1990).

In the present application, Applicants submit that a *prima facie* case of obviousness has not been established. It appears that individual elements of the four cited references using the present application as a template to attempt to combine the unrelated elements in an attempt to deprecate the claimed invention. Particularly, the primary reference, Holtrop et al., do not describe nor suggest a multi-layered fiber reinforced thermoplastic sound absorbing panel as

recited in Claim 1. Holtrop et al. describe a laminate structure that includes three separate layers of foamed thermoplastic material adhesively bonded together, with the middle layer formed from a different thermoplastic material than at least one of the outer layers. A resin impregnated fabric is bonded to the outer surfaces of the laminate structure. Applicants submit that only one element, the outer fabric layer, of the Holtrop et al. laminate structure is recited in Claim 1 of the present application.

Specifically, Holtrop et al. teach a core formed from three layers of a foamed thermoplastic with the center layer being formed from a different thermoplastic than at least one of the other foamed layers. Claim 1 of the present application recites "a non-foam porous fiber reinforced thermoplastic core layer comprising a thermoplastic material and from about 20 weight percent to about 80 weight percent fibers". The Holtrop et al. core is a foam and does not contain any reinforcing fibers. Claim 1 also recites an air impermeable barrier layer bonded to the second surface of the core with a tie layer. The Holtrop et al. laminate does not include these two elements. Claim 1 further recites a fabric layer bonded to the air impermeable barrier layer. The Holtrop et al. laminate has a resin impregnated fabric bonded to the outer surfaces of the laminate. Furthermore, Claim 1 recites a decorative layer bonded to the first surface of the core. The Holtrop et al. laminate does not include a decorative layer bonded to the first surface of the core; however, the Holtrop et al. laminate teaches a decorative layer bonded to the resin impregnated fabric that is bonded to the first surface of the core.

Secondary reference Weber et al. teaches a fiber reinforced foam with an integral outer skin. Weber et al. does not teach any of the elements recited in Claim 1. The core layer recited in Claim 1 is a non-foam porous fiber reinforced thermoplastic. The fiber reinforced foam of Weber et al. is not the same as the non-foam porous fiber reinforced thermoplastic recited in

Claim 1. Further it would not be obvious to modify the laminate of Holtrop et al. with the integral outer skin fiber reinforced foam of Weber et al. because the modification would destroy the purpose of the Holtrop et al. invention, improved acoustical absorption. There is no indication in Weber et al. that there are any improved acoustical absorption properties in their integral skin foam. One skilled in the art would know that replacing the foamed layers of Holtrop et al. with the integral skin foam of Weber et al. would decrease acoustical properties because the skins of the layers would be acoustical reflectors thereby lowering acoustical absorption properties of the laminate.

Secondary reference Juriga teaches a multi-layer insulating laminate that is suitable for a sound attenuating barrier. The laminate includes a decorative layer bonded to one side of a fiber mat. The other side of the fiber mat is bonded to one side of a foam layer. A fiber scrim is bonded to the other side of the foam layer. The fiber mat is permeated and saturated with a thermoplastic polymeric resin which makes the fiber mat non-porous. While Juriga does teach a decorative layer bonded to one side of the laminate and a fiber skin bonded to the other side of the laminate, Juriga does not teach the other elements of Claim 1. Particularly, Juriga does not teach a non-foam porous fiber reinforced thermoplastic core as recited in Claim 1. Rather, Juriga teaches a fiber mat permeated and saturated with a thermoplastic polymeric resin which makes the fiber mat non-porous. Juriga also teaches a foam layer that is porous, but the foam layer does not include reinforcing fibers. Also, as admitted by the Office Action, at page 4, Juriga does not disclose an air impermeable barrier layer comprising a non-permeable thermoplastic material having a melting temperature higher than the melting temperature of the core layer thermoplastic material. Further it would not be obvious to modify the laminate of Holtrop et al. with the laminate structure of Juriga because there is no motivation to do so, other than hindsight, using

the claimed invention as an instruction manual or “template” to piece together the teachings of the prior art. The Office Action asserts that it would have been obvious to one of ordinary skill in the art to combine the structures of Holtrop with the apparatus of Jurga to provide an adhesive to the structure. Applicants submit that because Holtrop et al. discloses adhesively bonding the three foamed layers to one another (Col. 4, line 44 to Col 5, line 2), the asserted motivation to combine Juriga with Holtrop et al. does not exist. Furthermore, the combined teachings of Holtrop et al and Juriga do not teach the structure recited in Claim 1. Particularly, there is no teaching of a non-foam porous fiber reinforced thermoplastic core, a barrier layer bonded to the second surface of the core with a tie layer, a fabric layer bonded to the barrier layer, and a decorative layer bonded to the first surface of the core.

Secondary reference Orimo et al. teaches a sound insulation structure that includes a low density layer and a high density layer formed on the low density layer. The low density layer is made from two separate fibrous layers, a sound-absorbing layer and a low spring constant layer. Each of the two fibrous layers are non-woven fabric layers that are from staples of thermoplastic synthetic fibers. Each fibrous layer contain three different diameter thermoplastic fibers having different softening temperatures. The high density layer is an air-impermeable polymer material formed on the low density layer. No tie layer is used to bond the high density layer to the low density layer because the high density layer is formed directly on the low density layer. Orimo et al. do not teach a non-foam porous fiber reinforced thermoplastic core layer as recited in Claim 1. Rather Orimo et al. teaches a low density layer that is a non-woven fabric of thermoplastic synthetic fibers. Also, Orimo et al. do not teach a barrier layer bonded to the second surface of the core with a tie layer as recited in Claim 1. Rather, Orimo et al. teaches a high density layer of an air-impermeable polymer material formed directly on the low density layer. Further it

would not be obvious to modify the laminate of Holtrop et al. with the laminate structure of Orimo et al. because there is no motivation to do so, other than hindsight, using the claimed invention as an instruction manual or “template” to piece together the teachings of the prior art.

The Office Action asserts that it would have been obvious to one of ordinary skill in the art to combine the structures of Holtrop et al. with the apparatus of Orimo et al. to improve sound insulation characteristics and to protect the sound absorbing layers from damage. Applicants submit that there is no indication in Orimo et al. that the sound insulation characteristics would be superior to the sound insulation characteristics of Holtrop et al. Further, there is no indication that the purpose of the high density layer is to protect the low density layer from damage. Rather, Applicants submit that the high density layer is a sound reflector used by Orimo et al. to reflect sound waves back into the low density layers. Furthermore, the combined teachings of Holtrop et al and Orimo et al. do not teach the structure recited in Claim 1. Particularly, there is no teaching of a non-foam porous fiber reinforced thermoplastic core, a barrier layer bonded to the second surface of the core with a tie layer, a fabric layer bonded to the barrier layer, and a decorative layer bonded to the first surface of the core.

Applicants submit that the combined teachings of Holtrop et al., Weber et al., Juriga, and Orimo et al. do not teach the structure recited in Claim 1. Particularly, and as explained above, there is no teaching from the combined references of a non-foam porous fiber reinforced thermoplastic core, a barrier layer bonded to the second surface of the core with a tie layer, a fabric layer bonded to the barrier layer, and a decorative layer bonded to the first surface of the core. In particular, Applicants submit that none of the cited references teach a non-foam porous fiber reinforced thermoplastic core; therefore, the combined teachings of Holtrop et al., Weber et al., Juriga, and Orimo et al. do not teach all the recitations of independent Claim 1. Accordingly,

Applicants submit that Claim 1 is patentable over Holtrop et al. in view of Weber et al., Juriga, and Orimo.

Claim 2 has been canceled.

Claims 3-9 depend from independent Claim 1. When the recitations of dependent Claims 3-9 are considered in combination with the recitations of Claim 1, Applicants respectfully submit that Claims 3-9 likewise are patentable over Holtrop et al. in view of Weber et al., Juriga, and Orimo.

Independent Claim 10 of the present application recites "[a] composite sheet comprising: a non-foam permeable core comprising discontinuous fibers bonded together with a thermoplastic resin, said permeable core having a density from about 0.2 gm/cc to about 1.8 gm/cc, said permeable core including a first surface and a second surface; an air impermeable barrier layer covering said second surface of said permeable core, said barrier layer comprising a non-permeable thermoplastic material; a fabric layer comprising at least one of a non-woven fabric and a woven fabric bonded to said barrier layer, said fabric layer forming an outer surface of said composite sheet; a decorative layer bonded to said first surface of said permeable core."

Independent Claim 20 recites "[a] method of manufacturing a porous fiber-reinforced thermoplastic sheet, said method comprising: providing a non-foam porous fiber-reinforced thermoplastic sheet having a first and a second surface and comprising at least one porous core layer comprising a thermoplastic material and from about 20 weight percent to about 80 weight percent fibers; bonding an air impermeable barrier layer to the second surface of the porous fiber-reinforced thermoplastic sheet, the barrier layer comprising a non-permeable thermoplastic material; bonding a decorative layer to the first surface of the porous fiber-reinforced thermoplastic sheet; and bonding a fabric layer to the barrier layer."

At least for the reasons explained above, Applicants submit that the combined teachings of Holtrop et al., Weber et al., Juriga, and Orimo et al. do not teach a composite sheet as recited in Claim 10, or a method of manufacturing a porous fiber-reinforced thermoplastic sheet as recited in Claim 20. Particularly, and as explained above, there is no teaching from the combined references of a non-foam porous fiber reinforced thermoplastic core, a barrier layer bonded to the second surface of the core with a tie layer, a fabric layer bonded to the barrier layer, and a decorative layer bonded to the first surface of the core. In particular, Applicants submit that none of the cited references teach a non-foam porous fiber reinforced thermoplastic core; therefore, the combined teachings of Holtrop et al., Weber et al., Juriga, and Orimo et al. do not teach all the recitations of independent Claim 1. Accordingly, Applicants submit that Claims 10 and 20 are patentable over Holtrop et al. in view of Weber et al., Juriga, and Orimo.

Claims 12 and 21 have been canceled.

Claims 11 and 13-19 depend from independent Claim 10, and Claims 22-27 depend from independent Claim 20. When the recitations of Claims 11 and 13-19, and Claims 22-27 are considered in combination with Claims 10, and 20 respectively, Applicants respectfully submit that dependent Claims 11, 13-19, and 22-27 likewise are patentable over Holtrop et al. in view of Weber et al., Juriga, and Orimo.

For the reasons set forth above, Applicants respectfully request that the Section 103(a) rejection of Claims 1-27 be withdrawn.

In view of the foregoing amendments and remarks, all the claims now active in this

application are believed to be in condition for allowance. Favorable action is respectfully solicited.

Respectfully submitted,

A handwritten signature in cursive script, reading "Michael Tersillo", written in black ink. The signature is positioned above a horizontal line.

Michael Tersillo
Registration No. 42,180
ARMSTRONG TEASDALE LLP
One Metropolitan Square, Suite 2600
St. Louis, Missouri 63102-2740
(314) 621-5070